ter as $0.18x+0.10y$, where x is the yearly variation of South American pressure, March to May, and y the yearly variation of pressure gradient, Zikawei-Miyazaki. The table of comparative results shows a fair agreement in sign between calculated and actual yields, especially for Hokkaido, and the conclusion is drawn that, in general, abnormally low pressure in the southern part of South America from March to May and abnormally small pressure gradient in March between Zikawei and Miyazaki are followed by a failure of the rice crop in northern Japan.

RADIO AMATEURS GET WEATHER REPORTS.

An amateur radio operator in North Dakota has written the Weather Bureau, United States Department of Agriculture, that he is daily receiving the weather forecasts sent out by the powerful wireless station at Arlington, Va. In Kansas, according to reports, the State agricultural college is now sending out weather reports by wireless every morning except Sunday, for the benefit of a considerable number of amateurs, many of whom live in the rural districts of that State and so are able to be of service to the farmers in their neighborhoods. No doubt in other parts of the country there are those who are "listening in" on the dispatches sent out by high-powered radio towers.

The sending of the Weather Bureau's forecasts by radio is in charge of the Navy, hence at many points far inland it is improbable that amateurs could pick up the messages. The Weather Bureau has carefully considered the possibilities of further use of the wireless in inland districts, but owing to an arrangement made some years ago whereby the bureau relinquished radio activity in favor of the Army for inland communication and the Navy for coastal work it has not been feasible to extend the forecast service in this manner. However, what the amateur in North Dakota and those in Kansas have been able to do suggests that others might "pick up" the weather reports, thereby securing them considerably in advance of the published reports.—*Weekly News Letter*, U. S. Dept. Agric., Mar. 31, 1920, p. 7.

American stations issuing daily meteorological bulletins are: Arlington, Va. (2,500); Key West, Fla. (2,400); Great Lakes Training Station, Ill. (1,512); North Head, Wash. (600); San Francisco, Calif. (600); and San Diego, Calif. (600). The time of all messages is 10 p. m., 75th meridian time and the wave lengths in meters are given in parentheses for each station.

INTERNATIONAL METEOROLOGICAL RADIO-SENDING STATIONS.

The Supplement to *La Nature* of January 10, 1920, page 9, contains a list of European wireless stations, which have in their daily program certain times for sending meteorological information.

Station.	Wave length (meters).	Time (G. M. T.)
Whitehall, Orkney Islands	2,800	9:30 20:30
Paris, France	2,600	9:45 16:00 21:30
Cleethropes, England	3,000	10:00 22:00
Scheveningen, Netherlands	1,800	11:15
Madrid, Spain	2,000	13:29

It is noted that the times of these messages are subject to change.—*C. L. M.*

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C. F. TALMAN, Professor in Charge of Library.

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